OATH/DECLARATION

In the Detailed Office Action mailed on December 1, 2005, the Examiner rejected Claims 83-127 under **35 U.S.C. 251** as being based upon a defective reissue oath/declaration. The Examiner asserted that the reissue oath/declaration filed with this application is defective because it fails to contain a statement required by 37 **CFR 1.175** and **MPEP § 1414** that all errors which are being corrected in the reissue application, up to the time of filing of the oath/declaration, arose without any deceptive intention on the part of the applicant. The Examiner further explained that in paragraph 3 of the supplemental declaration, dated May 24, 2005, the Applicant has merely stated "I also declare that all errors being corrected in the reissue application, up to the date of this supplemental reissue declaration, arose without any deceptive intention on my part," and that it is not clear as to what this date is.

As requested by the Examiner, the Applicant is setting forth another Supplemental Reissue Declaration, which is annexed hereto, and which clearly specify "the date" as the date of filing of the declaration.

Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 83-127 under 35 U.S.C. 251 as being based upon a defective reissue oath/declaration.

THE EXAMINER'S OBJECTION TO CERTAIN AMENDMENTS TO THE SPECIFICATION AS "NEW MATTER" IS MISPLACED

In the Detailed Office Action mailed on December 1, 2005, the Examiner also rejected Claims 83-127 under 35 U.S.C. 251 as being based upon new matter added to the patent for which reissue is sought. The Examiner considered a number of the applicant's amendments to the specification to be new matter.

In setting forth the amendments to the specification, the Applicant has relied on a number of patent legal principles that are well settled, and supported by case law. Before responding to the Examiner's objections to specific amendments to the specifications, it would be helpful to review these legal principles, which govern the written description requirements, allowed amendments to specification, and enablement. Also it would be helpful to review the patent case law governing the disclosure in the original patent (U.S. PATENT NO. 5,286,037, hereinafter the '037 patent) for which reissue is sought, and the context of the Court ruling related to the use of momentary switches for the inventions claimed in claims 1 and 23 of the '037 Patent.

Review of Legal Principles:

The first legal principle that is related to description requirements is that by disclosing a device that inherently performs a function, operates according to a theory, or has an advantage, a patent applicant necessarily discloses that function, theory, or advantage even though he says nothing concerning it. The application may be later amended to recite the function, theory, or advantage without introducing prohibited new matter. See **Manual of Patent Examination Procedure (MPEP), Section 2163.07(a)**. See, also, **In re Smythe and Shamos**, 480 F.2d 1376, 178 U.S.P.Q. 279 (C.C.P.A. 1973). See, also, **In re Lange**, 644 F.2d 856, 209 U.S.P.Q. 288, 295 (C.C.P.A. 1981). See, also, **Kennecott Corp. v. Kyocera International, Inc.**, 835 F.2d 1419, 5 U.S.P.Q.2d 1194 (Fed. Cir. 1987).

Further, the PTO Board of Appeals held that amending a specification by inserting an inherent property or correcting an erroneous structural formula of a compound which is necessarily produced by a disclosed process or example does not involve prohibited "new matter." **Ex parte Marsili, Rossetti, and Pasqualucci**, 214 U.S.P.Q. 904, 906 (PTO Bd. App. 1979).

In addition, the Federal Circuit held that the law does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention. The law recognizes that patent specifications are written for those skilled in the art, and requires only that the inventor describe the "best mode" of making and using the invention known to him at the time. **SRI Internationalv. Matsushita Electric Corp. of America**, 775 F.2d 1107, 227 U.S.P.Q. 577 (Fed.Cir. 1985). See, also, **International Rectifier Corp. v. SGS-Thomson Microelectronics Inc.**, 38 U.S.P.Q.2d 1083, 1086 (Cal. 1994).

Furthermore, the disclosure of an application embraces not only what is expressly set forth in words or drawings, but what would be understood by persons skilled in the art. Those features that are well known are as if they were written out in the patent. See **Ex parte Wolters and Kuypers**, 214 U.S.P.Q. 735, 736 (PTO Bd. App. 1979).

Also, the function of the description requirement is to ensure that, as of the filing date of the application relied upon, the inventor had possession of the specific subject matter later claimed by him; how the specification accomplishes this is not material. The claimed subject matter need not be described in haec verba to satisfy the description requirement. The application need not describe the claim limitations exactly, but only so clearly that one having ordinary skill in the pertinent art would recognize from the disclosure that applicant invented the subject matter including such limitations. **In re Herschler**, 591 F.2d 693, 200 U.S.P.Q. 711, 717 (C.C.P.A. 1979).

With respect to enablement, the Federal Circuit explained that enablement is a legal determination of whether a patent enables one skilled in the art to make and use the claimed invention. It is not precluded even if some experimentation is necessary, although the amount of experimentation needed must not be unduly extensive. Enablement is determined as of the filing

date of the patent application. Furthermore, a patent need not teach, and preferably omits, what is well known in the art. **Hybritech Inc. v. Monoclonal Antibodies, Inc.**, 802 F.2d 1367, 231 U.S.P.Q. 81 (Fed. Cir. 1986).

Also, in **Williams Service Group Inc. v. O.B. Cannon & Son Inc.**, 33 U.S.P.Q.2d 1705, 1723 (Pa. 1994), it was held that the test of enablement is whether a person of ordinary skill in the relevant art, using his or her knowledge and the patent disclosure, could make and use the invention without undue experimentation. Further, claims need not be limited to exemplification or preferred embodiments in order to satisfy enablement requirements. **Ex parte Gould**, 6 U.S.P.Q.2d 1680 (B.P.A.I. 1987).

With respect to the scope of disclosure, and what constitutes written description in the '037 patent, in **Union Oil Co. of California v. Atlantic Richfield Co.**, 208 F.3d 989, 54 U.S.P.Q.2d 1227, 1233, 1237, 1238 (Fed. Cir. 2000), the Federal Circuit explained that appellant refiners assert that the specification does not describe the exact chemical component of each combination that falls within the range of claims of the '393 patent. However, neither the Patent Act nor the case law of this court requires such detailed disclosure. "[The applicant] does not have to describe exactly the subject matter claimed"; . . . ("ranges found in applicant's claims need not correspond exactly to those disclosed in [the specification]; issue is whether one skilled in the art could derive the claimed ranges from the [] disclosure." The Federal Circuit added that "One of this court's predecessor courts clarified that disclosure in an originally filed claim satisfies the written description requirement." The Federal Circuit then held "Under these circumstances, we consider the original claim in itself adequate 'written description' of the claimed invention. **It was equally a 'written description' . . . whether located among the original claims or in the descriptive part of the specification**" (emphasis added).

Also, in **Chemical Separation Technology Inc. v. United States**, 51 Fed. Cl. 771, 63 U.S.P.Q.2d 1114, 1118 (US Ct. Fed. Cl. 2002), the United States Court of Claims held, "According to the Patent Act, the specification includes not only the **claims of the patent**, but also the enablement, written invention description, and best mode" (emphasis added). In addition, the Federal Circuit has long established that a claim is construed in light of the claim language, the other claims, the prior art, the prosecution history, and the specifications. **SRI International v. Matsushita Electric Corp. of America**, 755 F.2d 1107, 227 U.S.P.Q. 577 (Fed. Cir. 1985). Furthermore, in **Vitronics Corp. v. Conceptronic, Inc.**, 90 F.3d 1576, 1582-83, 39 USPQ2d 1573, 1576-77 (Fed. Cir. 1996), the Federal Circuit held that "when construing a claim, a Court should first look to the intrinsic evidence, i.e., the patent itself, **its claims**, written description, and, if in evidence, the prosecution history" (emphasis added). Clearly, the Courts have deemed that any disclosure or description in the claims is part of the description in the specification.

The amendments to the specifications do not constitute new matter:

In view of the aforestated legal principles, the Applicant firmly believes that the amendments to the specifications do not constitute new matter. More specifically:

1. Items 2, 8, 10 & 11 amends the specification by explaining and clarifying that certain functions described in the specification, and which employ the two states of a bi-stable switch, could also be implemented using the two states of the associated routing square. The specification clearly describes that the routing square is controlled, or activated, by a switch. The specification, also, discloses that the routing square has two distinct states. Further, the specification (Figure 2) explains that when a bi-stable switch is used, one state of the routing square corresponds to the "on" position of the bi-stable switch (binary logic "1"), and the second state of the routing square

corresponds to the "off" position of the bi-stable switch (binary logic "0"). Accordingly, it is inherent in the device described in the preferred embodiment of the '037 patent that the states of a bi-stable switch, and the corresponding routing square are equivalent, and could be used interchangeably to perform the various described functions. Because this characteristic is inherent in the preferred embodiment, the specification could be amended to recite this feature, or theory (namely that the states of the routing square could be used in lieu of the states of a corresponding bi-stable switch) without introducing prohibited new matter. See **In re Smythe and Shamos**, *supra*. See, also, **In re Lange**, *supra*. See, also, **Kennecott Corp. v. Kyocera International**, Inc., *supra*.

2. With respect to item 9, "EXCLUSIVE NOR," the Examiner has noted that the EXCLUSIVE NOR function is different than the INCLUSIVE OR function. The Applicant agrees with the Examiner's observation to the extent that the ordinary meaning of the term EXCLUSIVE NOR is different from the ordinary meaning of the term INCLUSIVE OR. However, the amendment described in item 9 is set forth in order to describe certain Boolean function, which is employed by the device disclosed in the preferred embodiment, with a term that is consistent with the term used in the art to describe said Boolean function. While the patent law permits a patentee to be his or her own lexicographer[1], the Applicant is desirous of eliminating any potential for misinterpretation of the description in the specification.

The '037 patent teaches that an appropriate Boolean function should be used to generate color, or display codes from operating codes. Further, the '037 patent defines one "appropriate" Boolean function for the 4 x 4 and 8 x 8 embodiments to include the "⊙" Boolean operator for

[1] See **Johnson Worldwide Associates Inc. v. Zebco Corp.**, 50 U.S.P.Q.2d 1607, 1610 (Fed. Cir. 1999). See, also, **Howes v. Zircon Corp.**, 992 F. Supp. 957, 47 U.S.P.Q.2d 1617, 1619 (Ill. 1998), where it was held that a patentee may choose to use terms in a manner other than their ordinary meaning.

the most significant (left) bit, and the "⊕" Boolean operator for the second and third bits ('037 patent, Figures 20). In addition, the '037 patent employs the following truth tables for the "⊙" and "⊕" Boolean operators:

"⊙" BOOLEAN OPERATOR	"⊕" BOOLEAN OPERATOR
0 ⊙ 0 = 1	0 ⊕ 0 = 0
0 ⊙ 1 = 0	0 ⊕ 1 = 1
1 ⊙ 0 = 0	1 ⊕ 0 = 1
1 ⊙ 1 = 1	1 ⊕ 1 = 0

These truth tables are reflected in Figures 23 and 24 of the '037 patent. However, the '037 patent, also, refers to the "⊙" Boolean operator as the INCLUSIVE OR Boolean operator, and the "⊕" Boolean operator as the EXCLUSIVE OR Boolean operator. While the term EXCLUSIVE OR used in the '037 patent to describe the "⊕" Boolean operator is consistent with its ordinary meaning as used in the art, the use of term INCLUSIVE OR to describe the "⊙" Boolean operator is not consistent with its use in the art. The "⊙" Boolean operator is known in the Boolean algebra text books [I4, I5 & I6] as the "Exclusive NOR," the "Coincidence," or the "Equivalence" Boolean function, while the truth table for the INCLUSIVE OR Boolean operator is as follows:

INCLUSIVE OR BOOLEAN OPERATOR.

0 OR 0 = 0
0 OR 1 = 1
1 OR 0 = 1
1 OR 1 = 1

If the truth table for the INCLUSIVE OR Boolean operator, as defined in the art, is reflected in the top table of Figure 23, it will result in the following lookup table:

OPCODE	000	001	010	011	100	101	110	111
000								
001								
010								
011								
100								
101								
110								
111								

Clearly, the top lookup tables of Figures 23 and 24 of the '037 patent are different from the above lookup table, since the patentee has intended to describe what is known in the art as the "EXCLUSIVE NOR" Boolean operator. The specification and drawings of the '037 patent are consistent in the use of the term "INCLUSIVE OR" to describe the "EXCLUSIVE NOR" Boolean operator. This is evident from the mathematical relationships derived from the lookup tables of Figures 23 and 24, as well as through the use of the "⊙" symbol in Figures 18 and 20. In the attached Supplemental Reissue Declaration, the Applicant explains his intent related to the initial use of the term "INCLUSIVE OR."

Accordingly, the amendment set forth in item 9 does not involve prohibited "new matter," but rather is a substitution of a term that is not consistent with its use in the art with a term that is consistent with the inherent property of the process described in the '037 patent. In

Ex parte Marsili, Rossetti, and Pasqualucci, *supra*, the PTO Board of Appeals held that amending a specification by inserting an inherent property or correcting an erroneous structural formula of a compound which is necessarily produced by a disclosed process or example does not involve prohibited "new matter."

3. The amendment set forth in item 12 merely recite two inherent features for the device disclosed in the preferred embodiment, namely:

i. There is almost unlimited[2] number of ways to assign the generated binary color codes to playing positions, and

ii. That a solution to a game, where the objective of the game is to provide the same color or image at all playing positions, is independent[3] of how the binary color codes are assigned to playing positions.

The Examiner objected to this amendment stating that, "While the Applicant would consider the above statement obvious, he did [not] mention it in the original specification and cannot now add the matter."

As a first matter, if the Examiner agrees with the applicant that the above listed characteristics, or features of the device disclosed in the preferred embodiment are obvious, and thus understood by one skilled in the art, then pursuant to the holding in **Ex parte Wolters and Kuypers**., *supra*, the disclosure of an application embraces not only what is expressly set forth in words or drawings, but what would be understood by persons skilled in the art. Those features that are well known are as if they were written out in the patent. Alternatively, even if the Examiner does not consider these characteristics or features to be obvious, by disclosing a device

[2] For the 4 x 4 embodiment, there are 8 color codes and 16 playing positions. The number of permutations of assigning 8 binary color codes to 16 playing positions is almost unlimited.

[3] To provide the same color or image all color codes must be the same. In such a case it does not make any difference how the color codes are assigned to playing positions.

that inherently performs a function, operates according to a theory, or has an advantage, a patent applicant necessarily discloses that function, theory, or advantage even though he says nothing concerning it. The application may be later amended to recite the function, theory, or advantage without introducing prohibited new matter. See **In re Smythe and Shamos**, *supra*. See, also, **In re Lange**, *supra*. See, also, **Kennecott Corp. v. Kyocera International, Inc.**, *supra*.

With or without the amendment set forth in item 12, these features are present, and inherent in the preferred embodiment of the invention. Accordingly, this amendment does not constitute prohibited new matter as maintained by the Examiner.

4. There are two amendments set forth in item 14. The first is related to the use of the keypad switch (i.e. momentary switch), which is disclosed in the claims of the '037 patent, to activate the routing square. The purpose of this amendment is to explain an inherent and obvious operating theory of the routing square, when a keypad switch is used. The Examiner acknowledged that the use of a keypad switch was disclosed in the originally filed claims. However, the Examiner maintained that the Court in the infringement litigation "concluded that the Applicant had only bi-stable switches and did not have a momentary switch." Further, the Examiner noted that "a keypad switch does not have a specific definition." It is respectfully submitted that the Examiner's arguments are misplaced. More specifically:

(i) With respect to the Court's ruling related to its claim construction of the limitation "entry control means," the Court held that this limitation is written in means-plus-function format, and as such it is subject to the provisions of 35 U.S.C. §112, ¶ 6. These provisions require the Court to identify the structure or structures disclosed in the specification that perform the recited function. See **Ishida Co. v. Taylor**, 221 F.3d 1310, 1316 (Fed. Cir. 2000). It is in that context (claim construction of a means-plus-function limitation) that the Court determined

that the only corresponding structure disclosed in the specification of the '037 patent is a bi-stable switch. It appears that the Court did not consider the disclosure of a keypad switch in the claims of the '037 patent to be a corresponding structure to the function recited by this means-plus-function limitation. Therefore, this ruling is focused mainly on applying the provisions of 35 U.S.C. §112, ¶ 6 for a specific original claim limitation of the '037 patent, and has no bearing on the scope of the original written description in the patent.

During the infringement litigation, the Applicant could not find, and did not cite, any case law directly on the legal question, "Should means-plus-function language be interpreted in light of the claims as well as the body of the specification?" This analysis of the infringement litigation was echoed on October 14, 2004, in an internet article by the widely followed Internet Patent Law Blog, Patently Obvious [I8]. The legal issue in this reissue application is not whether dependent claims can define structures of means-plus-function term, but rather whether the disclosure in the claims of the '037 patent constitutes written description that satisfies the written description requirements? The Federal Circuit in **Union Oil Co. of California v. Atlantic Richfield Co.**, *supra*, has answered this question when it held that, "It was equally a 'written description' . . . whether located among the original claims or in the descriptive part of the specification."

Because the means-plus-function limitation of "entry control means" is not included in the new claims of this reissue application, and since there is no disagreement that the use of a keypad switch is disclosed in the originally filed claims, and because it is settled law that a written description located among the original claims satisfy the written description requirements, it follows that the ruling of the Court related to its claim construction of the limitation "entry control means" has no bearing whatsoever on this reissue application, and that the Examiner has

taken this ruling out of context. There are, however, two issues for the Examiner to consider in this reissue application. Namely, what is the ordinary meaning of the term "keypad switch," and does the device disclosed in the '037 patent operate with a momentary switch.

(ii) With respect to the ordinary meaning of the term "keypad switch," the Examiner erred in her explanation that "a keypad switch does not have a specific definition." As shown in the annexed Information Disclosure Statements, the cited references indicate that the ordinary meaning of the term "keypad switch" is momentary switch. These references include the following:

a. The dictionary definition of keypad switch [I7] is "the keys or push buttons on a computer keyboard, telephone, TV remote control, etc.," i.e. momentary switch.

b. The PTO classification for Electricity includes class 200, which is entitled "Circuit Makers and Breakers." In turn, sub class 237 is listed under class 200, and is entitled "Electric Switch Details." Then, sub class 329 is listed under sub class 237, and is entitled "Actuators." In turn, sub class 341 is listed under sub class 329, and is entitled "Push button." Sub class 341 is defined as "Subject matter wherein the operating structure comprises a push button element having a single surface on which pressure can be exerted." Then, Note 2 of Sub class 41 states: "**Push buttons** are also called keys or caps, often with the actual pushing surface called **a keypad**" (emphasis added).

c. The dictionary definition of the term "push button" [I9] is a momentary switch.

d. The title, abstract and claim 1 of United States Patent # 6,920,339 [P12] refers to the momentary switch used in a cell phone as keypad.

e. The title and background section of United States Patent # 6,976,916 [P7] employs the term "keypad" to describe the construction of a momentary switch.

f. Design United States Patent # 507,568 [P8] employs the term "keypad" to describe a momentary switch.

g. The abstract and claim 1 of United States Patent # 6,861,962 [P9] employ the term "keypad" to describe a momentary switch.

h. The title, abstract and claim 1 of United States Patent # 6,948,869 [P10] employ the term "keypad" to describe a momentary switch.

i. The abstract and claim 1 of United States Patent # 6,989,732 [P11] employ the term "keypad" to describe a momentary switch.

j. The title, abstract and claim 1 of United States Patent # 6,920,339 [P12] employ the term "keypad" to describe a momentary switch.

k. The title, abstract and claims 1-4 of United States Patent # 6,912,280 [P13] employ the term "keypad" to describe a momentary switch.

l. The abstract and claim 1, and Figures 1 & 2 of United States Patent # 6,950,680 [P14] employ the term "keypad" to describe a momentary switch.

m. Claim 1 and Figures 1 & 6 of United States Patent # 6,968,206 [P15] employ the term "keypad" to describe a momentary switch.

n. The abstract, claim 1 and Figure 1 of United States Patent # 6,930,260 [P16] employ the term "keypad" to describe a momentary switch.

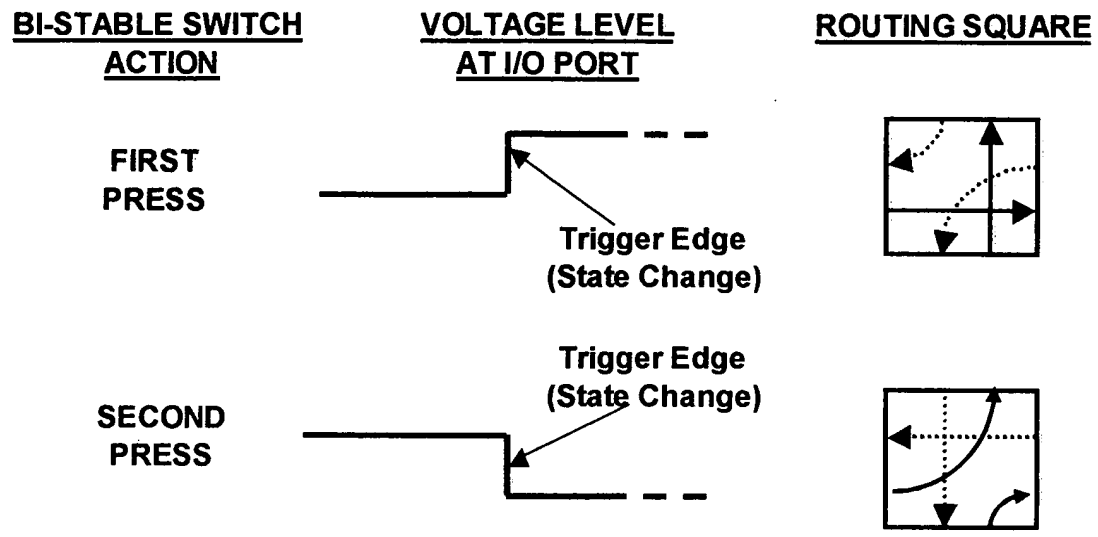
o. Switch manufacturer ARC-USA, Inc. [I1] defines the term "keypad" as a momentary switch.

In fact, in its decision, the Court defined momentary switches "like **keys on a keyboard**, revert to their original status the moment the user stops pressing on them" (emphasis added) (See footnote 1, page 6 & page 7 of the decision). Accordingly, it is well settled that the ordinary meaning of the term "keypad switch" is momentary switch.

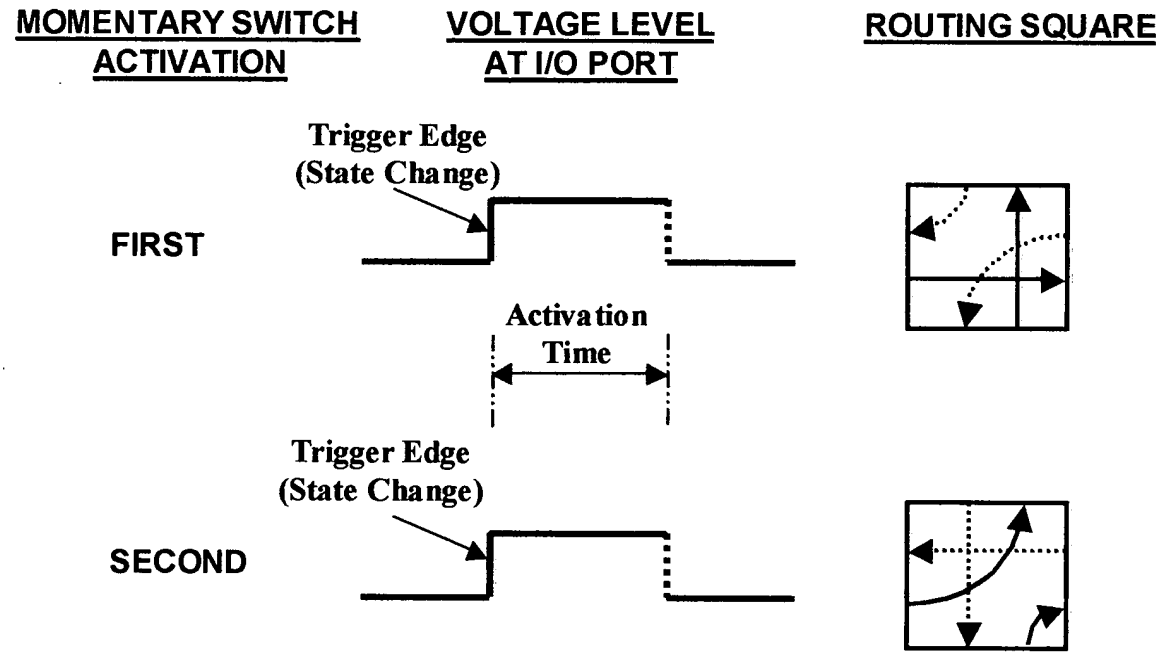
(iii) With respect to the issue of whether the device described in the '037 patent operates with a momentary switch, at the request of Examiner Michael O'Neil, and in May 2005, the Applicant E-mailed to Mr. O'Neil a fully functioning simulation program of the device disclosed in the '037 patent. However, Mr. O'Neil indicated recently that he never received this E-mail. This simulation program employs the right click control button of a computer mouse (i.e., a momentary switch) to operate the disclosed device. A disk containing this simulation program will be provided to the Examiner under a separate cover.

As explained in the amendment to the specification set forth in item 14, when a keypad switch (i.e., momentary switch) is used, successive activations of a momentary switch will toggle a corresponding routing square between its two states. Such operation is inherent in the description of the routing square indicated in Figure 2, and would be obvious to one skilled in the art. As is well known in the art, a typical method of detecting a switch closure with a CPU is to connect switches to input ports controlled by the CPU. When a switch is pressed, it closes a circuit, which in turn changes the electric voltage level at one or more input ports of the microprocessor, thus permitting the CPU to detect that the switch has been depressed. This same method may be used regardless of whether momentary or bi-stable switches are employed in a design. To demonstrate how the routing square is activated by both a bi-stable switch, and a momentary switch, the Examiner is referred to the following two illustrations:

a) **Operation with Bi-Stable Switch**



b) **Operation with Momentary Switch**



The function of the switch as explained in the '037 patent is to activate the associated routing square. When depressed, the closure of a momentary switch is detected by the CPU. As a result, the CPU first determines which routing square is associated with the switch, and next

uses this information to change the state of the routing square to the other of its two states. Once the state of the routing square is recorded by the CPU, it will stay in this state until such time that the associated switch is pressed again. In this vein, it is the detection of the closure of the switch, and not the actual position, that is important in transitioning a routing square between its two states. This is why momentary or bi-stable switches may be used interchangeably in the context of the '037 patent disclosure. Once the closure is detected, the position of the switch is unimportant.

To further demonstrate the obvious inherent feature that the use of a momentary switch, or a bi-stable switch, is transparent to the operation of the device disclosed in the '037 patent, the Examiner is referred to the following two examples:

a. The first example employs a bi-stable switch to activate the routing square. If we assume that the routing square is at an initial logical state "0" (Fig. 2a of the '037 patent), and if the initial position of the bi-stable switch is "off," then upon a first activation of the switch to the "on" position, the logical state of the routing square will be "1" (Fig. 2b of the '037 patent). Then upon a second activation of the switch o the "off" position, the logical state of the routing square will return to "0." Further activations of the switch will toggle the logical state of the routing square between "1" and "0." This process is demonstrated in the following table:

SWITCH POSITION	**ROUTING SQUARE**
Initial Position ("OFF")	"0" (Fig. 2a)
"ON"	"1" (Fig. 2b)
"OFF"	"0" (Fig. 2a)

"ON"	"1" (Fig. 2b)
"OFF"	"0" (Fig. 2a)
"ON"	"1" (Fig. 2b)
Etc, . . .	

b. The second example employs a momentary switch to activate the routing square. Because the normal initial position of a momentary switch is "off," and if we assume that the routing square is at an initial logical state "0" (Fig. 2a of the '037 patent), then upon a first activation of the switch, the logical state of the routing square will be "1" (Fig. 2b of the '037 patent), and upon a second activation of the switch, the logical state of the routing square will return to "0." Further activations of the switch will toggle the logical state of the routing square between "1" and "0." This process is demonstrated in the following table:

SWITCH ACTIVATION	**ROUTING SQUARE**
Initial Position	"0" (Fig. 2a)
FIRST	"1" (Fig. 2b)
SECOND	"0" (Fig. 2a)
THIRD	"1" (Fig. 2b)
FOURTH	"0" (Fig. 2a)
FIFTH	"1" (Fig. 2b)
Etc, . . .	

The above two examples demonstrate that successive activations of a bi-stable switch or a momentary switch will result in the identical statuses for the corresponding routing square.

Which means that the type of switch used has no impact whatsoever on the function performed by the routing square and, therefore, is transparent to the operation of the device.

There are hundreds, if not thousands, of microprocessor controlled devices that employ switches. As indicated by the above illustrations, and examples, interfacing a switch with a microprocessor controlled device is a simple task that is well known to one skilled in the art. As determined by the PTO Board of Appeals in **Ex parte Wolters and Kuypers**, *supra*, the disclosure of an application embraces not only what is expressly set forth in words or drawings, but what would be understood by persons skilled in the art. Those features that are well known are as if they were written out in the patent. Here, there is no disagreement that the originally filed claims of the '037 patent disclose on an in use of a keypad switch. The ordinary meaning of the term "keypad switch" is momentary switch. Accordingly, the first amendment to the specification set forth in item 14 is not prohibited new matter.

The purpose of the second amendment to the specification set forth in item 14 is to incorporate the technical description in original claims 8 and 28 of the '037 patent into the written specification of the reissue application. In substance, this amendment explains a design choice that is based on an inherent characteristic of the invention. Namely, that the color codes in the 4 x 4 embodiment, for example, could be assigned to any pre-defined images or colors, including the color reflected from the surface of a display when it is dark. The Examiner agreed that this second amendment explains indeed what constitutes a design choice, but argued that such explanation is new matter "since Applicant did not have support for this matter in the originally filed specification."

This argument by the Examiner has no merit since original claim 8 of the '037 patent clearly states:

"An electronic game device as recited in claim 1 wherein each of said plurality of color codes corresponds to either each of a plurality of predetermined colors or to a dark indication."

Since there are 5 different color code groups described for the 4 x 4 embodiment, it follows that it would be obvious for one skilled in the art to use the technique described in original claim 8 for the purpose of operating the device in 2, 3, 4, or 5 colors or images. This is simply done by varying the assignment of color codes to specific colors or images. Original claim 28 recites similar language to original claim 8. The Applicant respectfully refers the Examiner to the holding in **Ex parte Wolters and Kuypers**, supra, where the PTO Board of Appeals ruled that the disclosure of an application embraces not only what is expressly set forth in words or drawings, but what would be understood by persons skilled in the art. Those features that are well known are as if they were written out in the patent.

Further, the Federal Circuit held that the law does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention. The law recognizes that patent specifications are written for those skilled in the art, and requires only that the inventor describe the "best mode" of making and using the invention known to him at the time. **SRI Internationalv. Matsushita Electric Corp. of America**, *supra.* See, also, **International Rectifier Corp. v. SGS-Thomson Microelectronics Inc.**, *supra.* Here, not withstanding the disclosure in original claims 8 and 28, it would have taken hundreds of pages of written specification to describe every conceivable and possible embodiment of the invention disclosed in the '037 patent. The patentee has described two embodiments that reflect the "best mode" of making and using the invention known to him at the time, namely a 4 x 4 embodiment with 5 colors, and an 8 x 8 embodiment with 9 colors. The patentee has also described a technique in original claims 8 and 28 that explains a very simple process to change the number of colors or images playable by the device.

THE EXAMINER'S OBJECTION TO CERTAIN TERMS IN THE CLAIMS AS "NEW MATTER" IS MISPLACED

In the Detailed Office Action mailed on December 1, 2005, the Examiner argued that "many of the limitations [in the claims] do not appear in the originally filed specification and are considered new matter." The Examiner provided a list ("some, but not all") of what she considered "new matter limitations." It is respectfully submitted that there is no merit to the Examiner's argument. The following tabulation provides the specification support/response for the specific limitations identified by the Examiner. Further, as requested by the Examiner, the Applicant is setting forth in the attached Exhibit "A" an explanation of the support in the '037 patent disclosure for the changes made to the claims, in compliance with the requirements of CFR 1.173(c).

CLAIMS	LIMITATION	SPECIFICATION SUPPORT/ RESPONSE
83, 100, 111 & 126	a playfield	Figure 1 indicates a playfield (layout for 4 x 4 playing positions; col. 1, lines 30-31; col. 2, lines 28-29; col. 2, line 32; col. 3, lines 47-49
83, 100, 111 & 126	Indicators	The term "indicator" is synonymous with the term "display" [see Microsoft Word Thesaurus: English (U.S.)]. There are over 50 references in the specification and drawing to the term display. For example, Figure 2 indicates an indicator (display) at each playing position; Figure 3 shows one indicator at each playing position for a total of 16 indicators; col. 2, lines 29 & 30; col. 3, lines 47 & 48. Further, the '037 patent describes a number of indicator structures that include a liquid crystal display (col.1, line 55; col. 2, line 51; original claim 39), lighted switches (col. 2, lines 29 & 30; col. 3, line 48; original claim 3), color video monitor (col. 2, line 58; original claim 37),

		and LED display (original claim 40).
86 & 117	multi-colored light emitting diodes	The specification at col. 2, lines 8 & 9 discloses the use of multi-color light emitting means to provide multi-color displays. Original claim 23 describes an embodiment that employs images. Original claim 38 states that these images include a geometric shape depicted in various colors. Original claim 40 states that the means to produce these images comprises an LED display.
87 & 119	a Cathod Ray Tube (CRT) screen,	The specification at col. 2, lines 56-58 discloses the use of a video monitor to provide multi-color displays. Original claim 23 describes an embodiment that employs images. Original claim 37 describes the use of video monitor to display these images. It is well known in the art that a video monitor could be implemented with a Cathod Ray Tube (CRT) screen.
87 & 119	a digital light processor (DLP) screen	The specification at col. 2, lines 56-58 discloses the use of a video monitor to provide multi-color displays. Original claim 23 describes an embodiment that employs images. Original claim 37 describes the use of video monitor to display these images. At the time the invention was conceived (1991) the digital light processor (DLP) technology was not known in the art. The first commercial DLP unit was shipped in 1996 by nView for use in projectors. Therefore, it is considered after invention technology, and as such it is not prohibited new matter to include in a reissue application.
87 & 119	a plasma screen,	The specification at col. 2, lines 56-58 discloses the use of a video monitor to provide multi-color displays. Original claim 23 describes an embodiment that employs images. Original claim 37 describes the use of video monitor to display these images. At the time the invention was conceived (1991) the plasma screen technology was not known in the art. It is considered after invention technology, and as such it is not prohibited

		new matter to include in a reissue application.
98, 107 & 123	The first set of binary numbers is generated randomly	The specification at col. 2, lines 34 & 35 describes the use of the microprocessor to generate **random** operating code patterns. Original claims 10 and 30 describe the use of a microprocessor that generates sets of **random** operating codes for each new game.
99, 108 & 124	The first set of binary numbers is predefined,	In Figures 1 and 23, the first set of binary numbers is predefined for a 4 x 4 embodiment as the binary numbers 000, 001, 010, 011, 100, 101, 110 & 111. Similarly, in Figure 24, the first set of binary numbers is predefined for an 8 x 8 embodiment as the 16 binary numbers 0000 to 1111. The specification at col. 4, line 61 to col.5, line 5 describe the first set of predefined binary numbers for a 4 x 4 embodiment to as the eight binary numbers 000 to 111.
99, 108 & 124	And is stored as program data in a data section of the control program	Figure 4 indicates that the control program is stored in the Read Only Memory (ROM) of the microprocessor. It is well known in the art that data used for a control program is normally stored in a data section of the control program. In this case the predefined set of binary numbers disclosed in the '037 specification and drawings is considered data used by the control program. Examples of control program segments that employ this data are indicated in Figures 14, 15, 18 & 20.
105 & 111	a cursor control switch mechanism/structure	In substance, and as indicated in Figure 3, the invention describes a game device that includes an array of playing positions, and each position has a switch. The specification at col. 1, lines 8-12 teaches how to play the game by successively depressing switches at playing positions. A cursor control switch mechanism is well known in the art. When used with the invention, it will enable a player to select a playing position by navigating the cursor, and activating the selected playing position by depressing the cursor control switch. Clearly, a person

		skilled in the art is able to make and use the inventions claimed in claims 105 & 111 with no or little experimentation.
109	an algorithm that employs the dynamic routes of the routing squares on the playfield	This algorithm is shown in Figure 21, and is described in details in the specification, col. 6, line 48 to col. 7, line21.
11	a touch screen	The '037 patent describes a number of display structures that employ a screen, including a liquid crystal display (col.1, line 55; col. 2, line 51; original claim 39), and a color video monitor (col. 2, line 58; original claim 37). Further, as indicated in Figure 3, the invention describes a game device that includes an array of playing positions, and each position has a switch. The specification at col. 1, lines 8-12 teaches how to play the game by successively depressing switches at playing positions. A touch screen control mechanism is well known in the art and, when used with the invention, it would allow a player to select, and activate a playing position by simply touching the screen where the playing position is indicated. Clearly, a person skilled in the art is able to make and use the invention claimed in claim 11 with no or little experimentation.

Accordingly, by virtue of the aforestated, it is respectfully requested that the Examiner withdraw her rejection of claims 83-127 under 35 U.S.C. 251 as being based upon new matter added to the patent for which reissue is sought.

RESPONSE TO AMENDMENT

In the Detailed Office Action mailed on December 1, 2005, the Examiner reminded the Applicant of the provision of 37 CFR 1.173(c), which require the Applicant to provide the status (i.e., pending or canceled), as of the date of the amendment, of all patent claims and of all added

claims, **and an explanation of the support in the disclosure of the patent for the changes made to the claims**. The Examiner acknowledged that the Applicant, in the remarks section and in paragraphs 1 through 63 of the declaration, attempted to comply with this requirement. However, the Examiner noted that the recitations in the remarks and the declaration do not provide the specific specification support for all the limitations in the claims. The Examiner requested the Applicant to "submit a table clearly illustrating the exact column and line numbers and/or figure and reference number for each limitation in newly added claims 83-127." The Examiner provided two examples of the required tables. Further, the Examiner stated her belief that by completing the requirements of 37 CFR 1.173(C), the "Applicant will see that he does not have support for many of the limitations which as the Examiner stated above constitutes new matter," and requested that the table should clarify what is and is not new matter.

The Applicant is setting forth in Exhibit "A" annexed hereto the requested tables in the format provided by the Examiner. The Applicant agrees with the Examiner that these tables will be useful in demonstrating if the new claim limitations are, or are not, supported by disclosure in the '037 patent. With respect to the Examiner's request that "a table should clarify what is and is not new matter," it is the Applicant's firm belief that **all** the tables annexed in Exhibit "A" do not include any new matter.

As indicated in the tables attached in Exhibit "A," and contrary to the belief of the Examiner, the limitations set forth in claims 83-127, as well as in new claims 128 & 129, are fully supported in the specification, drawings, and original claims of the '037 patent. Although certain claimed subject matter is not described in haec verba in the specification, they are obvious, and are clearly understood by one skilled in the art. The ***Federal Circuit in Crown Operations International Ltd. v. Solutia Inc.***, 289 F.3d 1367, 62 U.S.P.Q.2d 1917, 1922 (Fed.

Cir. 2002), held that in order to satisfy the written description requirement, the disclosure as originally filed does not have to provide *in haec verba* support for the claimed subject matter in issue. Nevertheless, the disclosure must convey with reasonable clarity to those skilled in the art that the inventor was in possession of the invention, although we have also clarified that the possession test alone is not always sufficient to meet the written description requirement. As such, "the written description requirement is satisfied by the patentee's disclosure of 'such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention.'" See, also, **In re Herschler**, 591 F.2d 693, 200 U.S.P.Q. 711, 717 (C.C.P.A. 1979). See, also, . **In re Herschler**, *supra*.

DRAWINGS

Item 10 of the Office Action Summary mailed on December 1, 2005, indicates that the drawings filed on May 27, 2005 are accepted. However, in the Detailed Action under the heading "drawings," the Examiner states that the drawings are objected to under a provision of 37 CFR 1.83(a). Said provision requires that **the drawings must show every feature of the invention specified in the claims**. The Examiner requested the Applicant to provide corrected drawing sheets pursuant to 37 CFR 1.121(d) in order to comply with the above provision of 37 CFR 1.83(a).

As indicated from the tabulations in Exhibit "A," the Applicant firmly believes that none of the claim limitations set forth in claims 83-129 constitute prohibited new matter. However, in order to be fully compliant with the above provision of 37 CFR 1.83(a), and as requested by the Examiner, it is necessary to provide 4 new sheets pursuant to 37 CFR 1.121(d). The following new sheets indicate certain features of the invention specified in the claims, which are not shown in the current drawings:

1. New Figure 25 indicates two examples of an embodiment, wherein the playing positions are mapped on the surface of a three-dimensional housing such as a sphere, or a cube.

2. New Figure 26 is a lookup table that illustrates the assignment of the color codes for the 4 x 4 embodiment to two colors.

3. New Figure 27 indicates an alternate embodiment using keypad switches, and a liquid crystal display screen.

4. New Figure 28 indicates an alternate embodiment that interfaces with an external video monitor to provide multi-color displays, or a plurality of images.

The Applicant now believes that he is in full compliance with the cited provision of 37 CFR 1.83(a). Accordingly, it is respectfully requested that the Examiner withdraw her objection to the drawings under 37 CFR 1.83(a).

CLAIM REJECTIONS- 35 USC §112, FIRST PARAGRAPH

In the detailed action mailed on December 1, 2005, the Examiner rejected claims 83-127 under 35 U.S.C. 112, first paragraph, stating, "because the specification, while being enabling for the originally patented claims, does not reasonably provide enablement for new claims 83-127." Further, the Examiner argued that the new claims "add much new terminology to the patent that is not supported in the original specification." The Examiner provided examples of what she considers "new terminology" including, playfield, indicator, diodes, DLP screen, plasma screen, and cursor control. In addition, the Examiner argued that, "it would take one undue experimentation to determine how to implement a cursor control aspect of the game as is now being claimed."

As a first matter, the Examiner has based her rejection on the apparent mistaken belief that the "new terminology" is not supported in the original specification. This is simply not the

case. The tables included in the attached Exhibit "A" clearly indicate that these terms are well supported in the original disclosure of the '037 patent. More specifically:

a) The term "playfield" is used in the specification at col. 1, lines 30-31; col. 2, lines 28-29; col. 2, line 32; and col. 3, lines 47-49. Further, Figure 1 indicates a playfield that consists of an array of 4 x 4 playing positions. The Examiner does not explain why the use of the term "playfield" would make it difficult for a person skilled in the art to make or use the invention.

b) The term "indicator" is synonymous with the term "display" [see Microsoft Word Thesaurus: English (U.S.)]. The '037 specification and drawings include over 50 references to the term "display." For example, Figure 2 indicates an indicator (display) at each playing position; Figure 3 shows one indicator at each playing position for a total of 16 indicators; col. 2, lines 29 & 30; col. 3, lines 47 & 48. In addition, the '037 patent describes a number of indicator structures that would enable one skilled in the art to make or use the invention using these structures, which include a liquid crystal display (col.1, line 55; col. 2, line 51; original claim 39), lighted switches (col. 2, lines 29 & 30; col. 3, line 48; original claim 3), color video monitor (col. 2, line 58; original claim 37), and LED display (original claim 40). The Examiner does not explain the difficulty faced by one of ordinary skills in the art in making or using the invention in light of the above referenced disclosure in the invention related to the term indicator, i.e., display.

c) An LED (Light Emitting Diode) display is disclosed in original claim 40. The specification at col. 2, lines 8 & 9 discloses the use of multi-color light emitting means to provide multi-color displays. Original claim 23 describes an embodiment

that employs images. Original claim 38 states that these images include a geometric shape depicted in various colors. Original claim 40 states that the means to produce these images comprises an LED display. Further, it is well known in the art that a Light Emitting Diode is a structure that emits light as the name implies. A person of ordinary skills in the art is able, without any experimentation whatsoever, to use either a single color LED, or a plurality of LEDs in different colors, or a multi-color LED, at each playing position, to provide a plurality of visual indications. The Examiner does not explain why it would take undue experimentation to use Light Emitting Diodes to make, or use the invention.

d) The specification at col. 1, lines 53-56; col. 2, lines 50-55; original claim 39 describe the use of a Liquid Crystal Display to make the invention. Further, the specification at col. 2, lines 56-58 discloses the use of a video monitor to provide multi-color displays. Original claim 23 describes an embodiment that employs images. Original claim 37 describes the use of video monitor to display these images. It would have been an obvious matter of design choice to person of ordinary skill in the art to use any display mechanism or screen (for example LCD or a CRT screen) to perform the function of displaying game information to a player. Not withstanding the fact that DLP and plasma type screens are after invention technology, the Examiner has not explained why the above disclosure in the '037 patent is not enabling to one skilled in the art.

e) In substance, and as indicated in Figure 3, the invention describes a game device that includes an array of playing positions, and each position has a switch. The specification at col. 1, lines 8-12 teaches how to play the game by successively

depressing switches at playing positions. A cursor control switch mechanism is well known in the art. When used with the invention, it will enable a player to select a playing position by navigating the cursor, and activating the selected playing position by depressing the cursor control switch. Clearly, a person skilled in the art is able to make and use the inventions claimed in claims 105 & 111 with no or little experimentation. While the Examiner asserts, "it would take one undue experimentation to determine how to implement a cursor control aspect of the game as is now being claimed, she does not explain why that is the case.

Obvious Matter of Design Choice to one Skilled in the Art:

It should be noted that the Examiner's rejection under 35 U.S.C. 112, first paragraph, contradicts her statements under the heading "Claim Rejections – 35 USC § 103." In rejecting claims 87, 89, 105, 111-116, 119, 121-125 under 35 U.S.C. 103(a) "as being unpatentable over Parker Brother's 'Merlin,'" the Examiner states:

> "Merlin lacks in specifically disclosing a liquid crystal display, a cathode ray tube, a digital light processor screen, touch screen and a plasma screen. **It would have been obvious to one skilled in the art at the time the invention was made to use any type of display mechanism**. At the time the invention was made, **it would have been an obvious matter of design choice to a person of ordinary skill in the art to use any of the aforementionewd displays or a cursor control switch mechanism** because the Applicant has not disclosed that the particular displays or input devices, are used for particular purpose, provide an advantage, or solve a stated problem" (emphasis added).

The Applicant agrees with the Examiner's statement that it would be obvious to one skilled in the art at the time the invention was made to use any of the particular displays or input devices claimed herein.

In **Hybritech Inc. v. Monoclonal Antibodies, Inc**, *supra*, the Federal Circuit explained that enablement is a legal determination of whether a patent enables one skilled in the art to

make and use the claimed invention. It is not precluded even if some experimentation is necessary, although the amount of experimentation needed must not be unduly extensive. Enablement is determined as of the filing date of the patent application. Furthermore, a patent need not teach, and preferably omits, what is well known in the art. Also, in **Williams Service Group Inc. v. O.B. Cannon & Son Inc.**, *supra*, it was held that the test of enablement is whether a person of ordinary skill in the relevant art, using his or her knowledge and the patent disclosure, could make and use the invention without undue experimentation. Further, claims need not be limited to exemplification or preferred embodiments in order to satisfy enablement requirements. **Ex parte Gould**, *supra*.

In this reissue application, because what the Examiner describes as "new terminology" is well supported in the original specification, and since it appears that the Examiner believes that it would be obvious to one skilled in the art at the time the invention was made to use any of the particular displays or input devices claimed herein, and in view of the legal requirements for enablement, it is respectfully requested that the Examiner withdraw her objections to claims 83-127 under 35 U.S.C. 122, first paragraph.

CLAIM REJECTIONS- 35 USC §112, SECOND PARAGRAPH

In the detailed action mailed on December 1, 2005, the Examiner rejected claims 83-127 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically:

a) The Examiner rejected claims 90, 92, 100, 102, 103, 106, 109 and 110 for the improper use of the term "means" to invoke the means plus function language of 112, sixth paragraph. The Examiner suggested to the Applicant to amend these

claims to recite "means for..." not "means to...." Claims 90, 92, 100, 102, 103, 106, 109 and 110 were amended as requested by the Examiner.

b) The Examiner rejected claims 97 and 106 as being in a narrative form and "replete with indefinite and functional or operational language." The Examiner requested that these claims must be in one sentence form only. Claims 97 and 106 have now been deleted, and new claims 128 & 129 have been added, and are drafted to comply with the Examiner's request.

c) The Examiner rejected claims 83 and 91 for reciting the limitation "the processor," and because the previous recitation was to a "microprocessor" not a processor. Claims 83 and 91 have been amended by replacing the term "processor" with "microprocessor."

d) The Examiner rejected claims 83, 100, 111, 126 and 127 for reciting "... when the objective of the game is met." The Examiner stated that because the claims do not state what the objective is, it is unclear how one can determine when the objective is met. Claims 83, 100, 111, 126 and 127 have now been amended to reflect that the objective of the game is predetermined.

e) The Examiner noted that dependent claim 93 recites the limitation "a control program," while independent claim 93 on which claim 93 depends just states "a control logic" not "a control program." Independent claim 83 has now been amended by replacing the term "control logic" with "control program."

f) The Examiner rejected claim 96 for reciting the limitation "the segment of the control logic," and because there is insufficient antecedent basis for this limitation in the claim. The Examiner explained that there is no previous recitation of "a

segment" just "control logic." Claim 96 has now been amended to provide the required antecedent basis for the limitation "the segment of control program."

g) The Examiner, also, rejected claim 96 for reciting the limitation "the activated keypad switch," stating that there is no antecedent basis for the "activated." Claim 96 has now been amended to provide the required antecedent basis for this limitation.

h) The Examiner rejected claim 114 for reciting the limitation "the program segment," stating that there is insufficient antecedent basis for this limitation in the claim. The Examiner explained that there is no previous recitation of "a segment" just "a program." Claim 114 has now been amended to provide the required antecedent basis for the limitation "the program segment."

Because the Applicant has now addressed all the issues identified by the Examiner pursuant to 35 U.S.C. 112, second paragraph, it is respectfully requested that the Examiner withdraw her rejections of claims 83-127 under 35 U.S.C. 112, second paragraph.

CLAIM REJECTION – 35 USC § 102

Claims 83, 100, 101, 103, 104, 111, 112, 126 & 127:

In the detailed action mailed on December 1, 2005, the Examiner rejected claims 83-85, 88, 90, 91, 93, 95, 96, 98-104, 107-110 and 126-127, under 35 U.S.C. 102(B), as being anticipated by Parker Brother's "Merlin."

The Applicant agrees with the Examiner that Merlin is an electronic gaming device comprising a housing. The Applicant, also, agrees that Merlin has a playfield that includes a plurality of playing positions (9 playing positions), and that each playing position includes an indicator that provides a plurality of visual indications (flashing red and dark). In addition, the

Applicant agrees that Merlin uses keypad switches, i.e. momentary push buttons, to activate the playing position. Further, Merlin does, in fact, employ the Texas Instruments TMS1100 micro-controller[4]. However, while Merlin has a control program executed on the micro-controller to control its operation, said control program does **not** assign a first set of binary numbers to playing positions on the playfield. Also, said control program does **not** route binary numbers respective to an activated playing position to each other. Further, said control program does **not** generate a second set of binary numbers from the first set of binary numbers using a Boolean function. In addition, said control program does **not** assign the second set of binary numbers to indicators on the playfield to provide visual indications as stated by the Examiner. The Applicant does agree with the Examiner that the control program used by Merlin determines when the objective of the game is met. Said objective is defined as to reach a state where the perimeter 8 indicators are flashing (indicators 1, 2, 3, 4, 6, 7, 8 & 9), while the center indicator (indicator 5) is dark.

In the detailed action, the Examiner does not cite any specific reference (paragraph, or section) in the Parker Brothers Instruction Booklet for the "Merlin," Magic Square Game, which provides support to the Examiner's statement related to Merlin assigning a first set of binary numbers to playing positions on the playfield, routing binary numbers respective to an activated playing position to each other, generating a second set of binary numbers from the first set of binary numbers using a Boolean function, or assigning the second set of binary numbers to indicators on the playfield to provide visual indications. The Applicant cannot ascertain the basis or foundation of the aforestated Examiner's statements any place between the four corners of the Merlin reference.

[4] The Applicant will provide one unit of the Merlin device to the Examiner to verify this fact.

The Examiner provides a hypothetical conclusory example[5] stating that a square has the binary number 0," when the associated light is off, and the binary number "1" when the light is on, and that "when the player presses the button, other binary numbers are generated for the other indicators." The examiner concludes that, "when a player presses one indicator, other indicators will turn off, therefore they have been routed a binary number, i.e. 0."

While it is conceivable that the Merlin micro-controller may generate a binary number "1" to flash an indicator, and a binary number "0" to turn an indicator off, or vice-versa, the Examiner does not explain, or reference, any disclosed algorithm that generates these binary numbers, and how such algorithm processes an activation of push button at a playing position. The only technical description disclosed in the Parker Brothers Instruction Booklet for the "Merlin," Magic Square Game is the following example:

> "Button #1 always affects lights 1, 2, 4 an5 in a predictable pattern. That is when you depress button #1, it **reverses** these lights: the ones that were off will go on and the ones that were on will go off. In this same way each of the other numbered buttons **reverses** the other groups of lights."

In substance, the above Merlin disclosure indicates that there is a **fixed** relationship between a push button, and a group of indicators, and that when the button is activated the indication states of the indicators are reversed. Such operation of the Merlin, Magic Square Game does not require the assignment of a first set of binary numbers to playing positions, the routing of binary numbers to each other, the generation of a second set of binary numbers from said first set using a Boolean function, or the assignment of the second set of binary numbers to the indicators.

The fact of the matter is that Merlin can't possibly generate a second set of binary numbers from the first set of binary numbers, using a Boolean function, as stated by the

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[5] The Parker Brothers Instruction Booklet for the Merlin, Magic Square game makes no reference to binary numbers.

Examiner, for the simple reason that the instruction set for the Texas Instrument TMS1100 micro-controller [I2] **does not include** any instructions for a Boolean operator that performs a Boolean function on two binary numbers. Which mean that Merlin does not contain any structure that generates said second set of binary numbers (color codes) from the first set of binary numbers (operating codes). Further, because of the absence of Boolean instructions in the TMS1100 micro-controller, there was no reason to incorporate operating codes or color codes in the Merlin toy. Which means that the Merlin toy does not contain any structure that assigns a first set of binary numbers to playing positions, that Merlin does not contain any structure that routes binary numbers respective to an activated playing position to each other, and that Merlin does not contain any structure that assigns the second set of binary numbers to indicators on the playfield to provide visual indications.

Further, since the Magic Square game has a playing board that includes nine playing positions, and because the game incorporates nine different relationships between buttons and lights, it is most likely that Merlin uses hard-wired instructions to activate its indicators. In the 1970's, the TMS1000 family of micro-controllers provided the game developer with a special type of instructions called hardwired instructions [I3]. Hardwired instructions have advantages in terms of efficient memory utilization and computational speed, specifically for I/O applications. As such, hardwired instructions were the most practical method, suitable for the Magic Square application, to provide the specified fixed relationships between buttons and lights. Which again supports the facts that the Merlin toy does not contain any structure that assigns the first set of binary numbers to playing positions, that Merlin does not contain any structure that routes binary numbers to each other, and that Merlin does not contain any structure that assigns the second set of binary numbers to indicators.

In order to demonstrate the advantages and benefits derived from the concept disclosed in the '037 patent, it would be helpful to review the prior art that employs push buttons and indicators similar to the Magic Square Game, cited reference of Morrison (US Patent # 4,216,965), and cited reference of Sinclair (US Patent # 4,513,973). Although not cited by the Examiner, the Applicant has also reviewed some of the U.S. Patent Documents referenced in the Morrison patent, including Brown (US Patent # 3,367,653) [P1], Creely (US Patent # 3,417,995) [P2], Sector (US Patent # 3,779,553) [P3], and Dieball (US Patent # 3,982,764) [P4].

A review of the above listed references reveals that the disclosed devices use switches connected to lights (Brown, Sector, Morrison & Sinclair), or alphanumeric displays (Dieball). The objects of the disclosed games vary from patent to patent, and include activating or distinguishing lights (Brown), forming designated characters (Dieball), discovering or illuminating a hidden or a secret maze (Morrison & Sinclair), or for two players to distinguish each other's indicators (Sector). While these devices relate to different objectives, they have the common structural characteristic of either hard-wired interconnections between buttons and lights, or a direct relationship or association between entry control mechanisms and indicators. For example, Brown uses two rotary switches, hard-wired in series with a light; Sector employs hard-wired, interconnected switch arrangements to permit two players to distinguish each other's indicators; and each of Morrison and Sinclair uses push buttons to discover secret or hidden lights that are hard-wired to the buttons. Clearly, none of these patents discloses a data-driven algorithm that defines a relationship between buttons and indicators.

A structure based on a hard-wired or a direct connection between buttons and indicators has the disadvantage of the need to define the exact relationship between each button and each indicator, and the further disadvantage of redefining such relationship between each button and

each indicator each time, or any time, a different relationship is desired. Further, in devices where a large number of buttons is used, the relationships between buttons and indicators become much more complicated because of the large number of permutations that exist between buttons and indicators. In addition, since hard-wired or a direct connections result in fixed relationships between buttons and indicators, it would be difficult to construct versatile games with additional features that enhance play value. For example, in order to provide a plurality of games for a hard-wired electrical board game, it would be necessary to change the hard-wired arrangements between buttons and indicators, which is very difficult[6] to do in a hard-wired, or fixed relationship. Furthermore, one of the critical factors that determine the feasibility of implementing a product concept or design using low cost micro-controllers is the size and complexity of the required computer program or software. In that regard, devices that are based on hard-wired or direct association between push buttons and indicators would require extensive use of memory resources in a microprocessor implementation. Such inefficient use of computer memory would have made it difficult, at the time the '037 invention was conceived, for a game or toy developer to provide versatile and additional features to enhance the play value of a game product.

With respect to the Magic Square game of the Merlin device, as indicated in the above analysis, and based on the available information in the public domain related to the Texas Instruments TMS1100 micro-controller [I3], it is believed that Merlin employs hard-wired instructions to control indicators upon the activation of a button. The hard-wired instructions would provide the stated direct relationship between the buttons and indicators of the Magic Square game, and would be most suitable for that application because of the very high ratio between fixed relationships (9) and number of playing positions (9).

[6] Dieball [P4} uses a mechanical rotary switch to vary the relationship between switches and alphabet characters.

By contrast, the invention disclosed in the '037 patent has a structure that assigns a first set of binary numbers to playing positions, it employs a geometric routing square to route binary numbers assigned to the to, bottom, left and right of an activated playing position to each other, it employs a Boolean function, or a lookup table, to generate a second set of binary numbers from said first set, and it assigns said second set of binary numbers to indicators on the playfield in order to provide the visual indications.

The above concept disclosed in the '037 patent overcomes the limitations, and disadvantages of the prior art. The use of a first set of binary numbers, which are manipulated by keypad switches to generate a second set of binary numbers that activate indicators, has the main advantage of decoupling push buttons from indicators. This is achieved by making push buttons control a structure that manipulates the selection of binary numbers, which in turn are processed by a Boolean function to generate a second set of binary numbers that activate the indicators on the playfield. In effect, the disclosure in the '037 patent describes a data-driven algorithm that provides many advantages, such as a changing relationship between buttons and indicators, a plurality of games by simply changing the assignment of the first set of binary numbers to playing positions, and the ability to increase the number of colors, or visual indications, playable by the device without increasing the design complexity.

The Applicant believes that it would be helpful for the Examiner to review, and observe the operation of the Merlin toy, and compares it to the operation of the program that simulates the preferred embodiment of the '037 patent. Accordingly, the Applicant is transmitting to the Examiner, under a separate cover, one unit of the Merlin device.

Prior PTO Determination Related to Merlin:

It should be noted that the Merlin device was cited as a reference in a number of patents,

including Weiner et al., U.S. Patent No 5,573,245 [P5], and Olti et al., U.S. Patent No 5,603,500 [P6]. In these patents, the following claims were allowed:

> "*A puzzle device, comprising:*
> *(a) an array of indicators, each of said indicators capable of alternately indicating a first state or a second state;*
> *(b) means for selecting one of said indicators;*
> *(c) means for changing, upon the selection of said one of said indicators, the state of at least one of the other of said indicators based on a pre-determined geometrical pattern, wherein said geometrical pattern is wrapped around,*" and

> "*A device, comprising:*
> *(a) an array of indicators, each of said indicators capable of alternately indicating a first state or a second state, said array of indicators being formed into a puzzle device having a three-dimensional shape;*
> *(b) means for selecting any one of said array of indicators; and*
> *(c) means for changing, upon the selection of said one of said array of indicators, the state of at least one of the others of said indicators based on a predetermined geometric pattern.*"

As stated by the Examiner, and agreed to by the Applicant, Merlin is an electronic device, which has an array of indicators, and each of said indicators provides two visual indications (indicating a first state or a second state). Further Merlin has keypad switches to select, and activate any of said indicators. Also, upon the activation of a button in Merlin, the state of at least one of the other indicators is changed. Accordingly, by virtue of allowing the above stated claims, the Examiner who handled Weiner et al., and Olti et al. has already determined that Merlin lacks the structure of a "predetermined geometrical pattern,"

Such determination is consistent with the fact that the main concept in the Merlin, Magic Square Game is based on a fixed relationship between buttons and indicators (Example, button #1 always affects lights 1, 3, 4 and 5), while each of Weiner et al., and Olti et al. discloses a plurality of geometric patterns that governs the relationship between buttons and indicators, thus allowing for a variable relationship based on the selected pattern.

Said determination is relevant to this reissue application since one of the main differences between Merlin and the device disclosed in the '037 patent is that in Merlin push buttons are, in effect, hard wired to indicators, while in the '037 patent, push buttons and indicators are decoupled through the use of the two sets of binary numbers. **Section 706.04 of the Manual of Patent Examination Procedure (MPEP)** clearly states that "Full faith and credit should be given to the search and action of a previous examiner unless there is a clear error in the previous action or knowledge of other prior art."

Accordingly, based on the PTO's own determination in Weiner et al., and Olti et al. the Merlin reference cannot anticipate any of the claims set forth herein.

By virtue of the aforestated, independent claims 83, 100, 111, 126 & 127 are submitted to be patentably distinguishable over the cited reference of Merlin for the reasons discussed above. Also, dependent claims 101, 103 & 104 are submitted to be patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 100, from which these claims depend, and for additional features that dependent claim 103 recites. In addition, claim 112 is submitted to be patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 111, from which these claims depend. As such, it is respectfully requested that the Examiner withdraw her rejection of claims 83, 100, 101, 103, 104, 111, 112, 126 & 127, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claims 85 & 115:

The Applicant agrees with the Examiner that Merlin employs a keypad switch that uses light emitting means. However, it is submitted that claim 85 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which this claim depends. Similarly, it is submitted that claim 115 is patentably distinguishable over

the cited reference of Merlin for at least the same reasons as independent claim 100, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 85 & 115, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claims 88 & 116:

The Applicant agrees with the Examiner that the visual indications in Merlin consist of one illuminated color (flashing), and a color reflected from the surface of the indicator when the keypad switch is dark. However, it is submitted that claim 88 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which this claim depends. Similarly, it is submitted that claim 116 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 100, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 88 & 116, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claim 90:

The Applicant agrees with the Examiner that Merlin has means for generating visual and audible effects during game play, and at the conclusion of a game. However, it is submitted that claim 90 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claim 90, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claims 91, 102 & 113:

While it is true that Merlin provides a plurality of games by providing "a random display of one or more blinking lights" when the "NEW GAME" button is pressed, an observation of the operation of the Merlin, Magic Square Game reveals that what the Merlin reference describes as a "NEW GAME" is, in effect, starting the same game from a different step in the game. Unlike the '037 patent, which defines a game by a different assignment of the first set of binary numbers to playing positions, the Magic Square Game has only one game that is initiated at various stages of the game when the "NEW GAME" button is pressed. This is evident by the fact that after playing a few games of Magic Square, the player would encounter the same boards (initial and intermediate) during game play. In any event, it is submitted that claim 91 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which this claim depends. Similarly, it is submitted that claim 102 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 100, from which this claim depends. Also, it is submitted that claim 113 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 111, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 91, 102 & 113, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claim 93:

As stated in the above discussion, based on the observation of the Magic Square Game operation, it is believed that the device operates with only a single game. Further, it is clear from the description in the Merlin reference that the initial display is produced at random, which means that there are no binary numbers stored in a data section of the control program, which

defines a plurality of games. In any event, it is submitted that claim 93 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claim 93, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claims 95 & 125:

The playfield in the Merlin device is configured as a 3 x 3, two-dimensional array of indicators, rather than a three dimensional configuration as recited in claims 95 & 125 of the '037 patent. In any event, it is submitted that claim 95 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which this claim depends. Similarly, it is submitted that claim 125 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 111, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 95 & 125, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claim 96:

Because the micro-controller used in the Merlin device cannot perform a Boolean function on two binary numbers [I2], the control program employed by Merlin does not include a segment that routes binary numbers to each other. In any event, it is submitted that claim 96 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claim 96, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claims 98, 99, 107, 108, 123 & 124:

As explained above, because the Merlin micro-controller does not include any instructions for a Boolean operator that performs a Boolean function on two binary numbers [I2], there is no need to assign binary numbers to playing positions either randomly or in a predefined manner. In any event, it is submitted that claims 98 & 99 are patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which these claims depend. Similarly, it is submitted that claims 107 & 108 are patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 100, from which these claims depend. Also, it is submitted that claims 123 & 124 are patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 111, from which these claims depend. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 98, 99, 107, 108, 123 & 124, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claim 109:

An algorithm that employs dynamic routes to assign binary numbers to indicators will, by definition, results in a variable relationship between buttons and indicators. The Merlin reference is clear in that the relationship between buttons and indicators is fixed. Accordingly, Merlin does not disclose such algorithm. In any event, it is submitted that claim 109 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 100, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claim 109, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

Claims 110 & 114:

A fixed assignment of the second set of binary numbers to indicators does not result in fixed relationship between buttons and indicators. This is the case because the second set of binary numbers are generated by first routing binary numbers of the first set to each other respective to an activated playing position. Because the binary numbers present at a playing position, when the associated button is activated, vary during the progress of a game, it follows that a fixed assignment would still result in a variable relationship between buttons and indicators. Since in the Magic Square game, the relationship between buttons and indicators is fixed, claims 110 & 114 are patentably distinguishable over the cited reference of Merlin. Also, it is submitted that claim 110 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 100, from which this claim depends. Similarly, it is submitted that claim 114 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 111, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 110 & 114, under 35 U.S.C. 102(b) as being anticipated by Parker Brother's "Merlin."

CLAIM REJECTION – 35 USC § 103

In the detailed action mailed on December 1, 2005, the Examiner rejected claims 87, 89, 105, 111-116, 119, 121-125, under 35 U.S.C. 103(a), as being unpatentable over Parke Brother's "Merlin."

Claims 89, 121 & 122

The Merlin reference clearly states that the on indication consists of a blinking light. By definition, an image is static, and as such the plurality of images produced by Merlin does not include a plurality of images as maintained by the Examiner. In addition, it is submitted that

claim 89 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 100, from which this claim depends. Similarly, it is submitted that claims 121 & 122 are patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 111, from which these claims depend. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 89, 121 & 122, under 35 U.S.C. 103(a) as being obvious and unpatentable over Parker Brother's "Merlin."

Claims 87, 105, 111 & 119

The Applicant agrees with the Examiner that at the time of the invention, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use any display or input device to implement the '037 invention. However, as discussed above, in dependent claim 111 is patently distinguishable over the cited reference of Merlin, at least because Merlin does not include any structure that assigns a first set of binary numbers to playing positions, Merlin does not route binary numbers to each other, a Merlin does not generate a second set of binary numbers from said first set using a Boolean function. In addition, it is submitted that claim 87 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which this claim depends. Similarly, it is submitted that claim 105 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 100, from which this claim depends. Also, it is submitted that claim 119 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 111, from which this claim depends. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 87, 105, 111 & 119, under 35 U.S.C. 103(a), as being obvious and unpatentable over Parker Brother's "Merlin."

It is not clear why the Examiner rejected claims 112-115, 123, 124 & 125, under 35 U.S.C. 103(a) as being obvious and unpatentable over Parker Brother's "Merlin."

Claims 86, 117, 118 & 120

In the detailed action, the Examiner rejected claims 86, 117, 118 and 120, under 35 U.S.C. 103(a) as being obvious and unpatentable over Parker Brother's "Merlin" in view of Sinclair, U.S. patent No. 4,513,973. The Examiner argued that Sinclair teaches an electronic game in which light emitting means are provided using multi-colored light emitting diodes. The Examiner concluded that "it would have been obvious to use multi-colored light emitting diodes in Merlin game so as to provide different challenges with different colors and to be aesthetically appealing."

There is no merit to the Examiner's argument. Sinclair discloses a game device, wherein the microprocessor is programmed to provide moves representing those made by an opponent player. A plurality of push buttons is provided so that buttons be depressed during game play to cause illumination of secret or hidden light sources. A player plays against the computer for lighting segments on the board associated with pairs of switches. Different colored lights are provided to differentiate between moves made by the player, and moved made by the computer.

Clearly, Sinclair does not disclose a puzzle device either in the context of the '037 patent, or the Magic Square Game. There are many games and toys known in the art, and which employ multi-colored light emitting means. The fact that a game uses a multi-color light emitting diode does not make it obvious to one skilled in the art to simply places multi-color light emitting diodes in the Merlin game "so as to provide different challenges with different colors and to be aesthetically appealing." In a similar vain, it would not have been obvious for one skilled in the

art of television to convert a black and white TV to a color TV because of the existence of a colored photograph.

The disclosure in the Merlin reference teaches that each button always affects a group of lights such that when the button is pressed, the lights are reversed (from on to off, and from off to on). This teaching does not work when you introduce more than 2 indications or colors. Further, Sinclair does not include any disclosure that teaches one skilled in the art how to convert the two state operation of the Magic Square Game into a game that employs 3 or more indications or colors.

The '037 patent teaches a novel concept of employing two sets of binary numbers, such that the first set in manipulated by the push buttons to generate the second set, which in turn activates the indicators. To increase the number of colors, one simply needs to increase the length of the binary number, i.e., the number of bits used. The preferred embodiment of the '037 patent illustrates two examples, a five color device, and a nine color device, where the main difference is the use of 4 bits binary numbers versus 8 bits binary numbers. The '037 patent, also teaches that one skilled in the art can, also, vary the number of colors playable by a device by changing the assignment of the second set of binary numbers to pre-defined colors, or to a dark indication. None of this teaching is included in Sinclair.

Accordingly, by virtue of the above, it is respectfully submitted that claims 86, 117, 118 and 120 are patently distinguishable over the cited reference of Merlin. Also, it is submitted that claim 86 is patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which this claim depends. Similarly, it is submitted that claims 117, 118 and 120 are patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 111, from which these claims depend. Accordingly,

it is respectfully requested that the Examiner withdraw her rejection of claims 86, 117, 118 & 120, under 35 U.S.C. 103(a), as being obvious and unpatentable over Parker Brother's "Merlin" in view of Sinclair.

Claims 92 & 94

In the detailed action, the Examiner rejected claims 92 and 94, under 35 U.S.C. 103(a) as being obvious and unpatentable over Parker Brother's "Merlin" in view of Skowronski et al., U.S. patent No. 4,809,979. The Examiner argued that Skowronski teaches an electronic puzzle device where means are provided to vary the difficulty level of play in a plurality of games. The Examiner concluded that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the difficulty level in the game of Merlin so that players are challenged during game play."

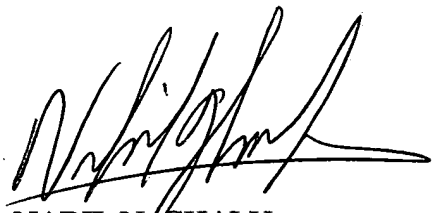
There is no merit to the Examiner's argument. Skowronski discloses a puzzle with a cube housing that is solved by rotating the faces into a horizontal plane. The cube device does not employ any push buttons, but rather uses an algorithm that is activated by **sequential rotation movements** of the cube housing in order to change a display one face of the cube. Skowronski, also, discloses that the microprocessor can be programmed for various levels of difficulty by using different algorithms. Clearly, the teaching of Skowronski is not applicable to Merlin, which uses push buttons rather than rotation to activate the indicators.

Because Merlin employs a fixed relationship between buttons and indicators, it is very difficult to vary the difficulty level of play without decoupling the buttons from the indicator. There is no disclosure in either the Merlin Reference, or in Skowronski that teaches one skilled in the art how to provide a more difficult game in Merlin.

Accordingly, by virtue of the above, it is respectfully submitted that claims 92 and 94 are patently distinguishable over the cited reference of Merlin. Also, it is submitted that claims 92 and 94 are patentably distinguishable over the cited reference of Merlin for at least the same reasons as independent claim 83, from which these claims depend. Accordingly, it is respectfully requested that the Examiner withdraw her rejection of claims 92 and 94, under 35 U.S.C. 103(a), as being obvious and unpatentable over Parker Brother's "Merlin" in view of Skowronski et al.

CLAIM OBJECTIONS

In the detailed action, the Examiner objected to claim 87 because of a typographical error. This error has now been corrected. It I respectfully requested that the Examiner withdraw her objection to claim 87.



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